

After Final Amdt

Application No. 10/723174
After Final Office Action of April 13, 2006

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Docket No.: M0925.70114US01

183. (Withdrawn) The method of claim 179, wherein each nucleotide is attached to a single nanoparticle or a nanoparticle aggregate.

184-186. (Cancelled)

187. (Withdrawn) The method of claim 179, wherein said nanoparticles are between 10 nm and 20 micrometers in diameter.

188. (Previously Presented) A method for determining a sequence of at least a portion of a DNA or an RNA strand, comprising:

- a) fragmenting one or more bases from a DNA or an RNA strand using a nuclease to form a plurality of fragments, each fragment comprising at least one base;
- b) sequentially identifying each of the one or more fragments by Raman spectroscopy; and
- c) determining the sequence of at least a portion of the DNA or RNA strand based on the sequential identification of each of the one or more fragments.

189. (Previously Presented) The method of claim 188, wherein each fragment is labeled with a Raman label.

190. (Currently Amended) The method of claim 188, wherein the nucleic acid DNA or RNA strand comprises labeled thymine.

191. (Currently Amended) The method of claim 188, wherein the nucleic acid DNA or RNA strand comprises labeled adenine.

192. (Currently Amended) The method of claim 188, wherein the nucleic acid DNA or RNA strand comprises labeled cytosine.

193. (Currently Amended) The method of claim 188, wherein the nucleic acid DNA or RNA strand comprises labeled guanine.

194. (Currently Amended) The method of claim 188, wherein the nucleic acid DNA or RNA strand comprises labeled uracil.

195. (Previously Presented) The method of claim 188, wherein sequentially identifying each of the one or more fragments by Raman spectroscopy comprises sequentially identifying each of the one or more fragments by surface enhanced Raman spectroscopy (SERS) and/or surface enhanced resonance Raman spectroscopy (SERRS).

196. (Withdrawn) The method of claim 179, wherein the act of attaching each of the one or more nucleotides to at least one nanoparticle occurs prior to the act of removing one or more nucleotides from a nucleic acid.

197. (Withdrawn) The method of claim 179, wherein the act of attaching each of the one or more nucleotides to at least one nanoparticle occurs after the act of removing one or more nucleotides from a nucleic acid.

198. (Previously Presented) The method of claim 188, wherein each of the one or more bases is free of an emission-enhancing aid.

199. (Previously Presented) The method of claim 188, wherein the act of sequentially identifying each of the one or more fragments by Raman spectroscopy comprises attaching each fragment to a surface, and identifying each fragment on the surface using Raman spectroscopy.

200. (Previously Presented) The method of claim 199, wherein the surface is the surface of a metal film.

201. (Previously Presented) The method of claim 199, wherein the surface is the surface of a metal particle.

202. (New) The method of claim 188, wherein sequentially identifying by Raman spectroscopy involves analyzing Raman data in which at least one spectral line represents a single nucleotide.